



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:

2002/01037 and 2002/01203

October 21, 2002

Mr. Bob Graham
State Conservationist
Natural Resources Conservation Service
101 SW Main St., Suite 1300
Portland, OR 97204

Re: Formal Section 7 Consultation and Essential Fish Habitat Consultation for Installation of One Infiltration Gallery and Repairs on Three Infiltration Galleries on Trout Creek, Jefferson County, Oregon (2 projects).

Dear Mr. Graham:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) that addresses the proposed repair of three infiltration galleries and the installation of one new infiltration gallery on Trout Creek in Jefferson County, Oregon. NOAA Fisheries concludes in this Opinion that the proposed actions are not likely to jeopardize Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*). This Opinion includes reasonable and prudent measures with terms and conditions that NOAA Fisheries believes are necessary and appropriate to minimize the potential for incidental take associated with these projects.

In addition, this document also serves as consultation on essential fish habitat (EFH) under Public Law 104-267, the Sustainable Fisheries Act of 1996, as it amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson Stevens Act). An EFH analysis is required for chinook salmon (*Oncorhynchus tshawytscha*).

Questions regarding this letter or attached Opinion should be directed to David Landsman of my staff in the Oregon Habitat Branch at 503.230.5406.

Sincerely,

Michael R. Crouse
f.i.

D. Robert Lohn
Regional Administrator

cc: Tom Nelson, ODFW
Rick Craiger, OWEB
Alan Mauer, USFWS
Deborah Haapala, NRCS
Adam Haarberg, Jefferson Co SWCD



Endangered Species Act - Section 7 Consultation
&
Magnuson - Stevens Act
Essential Fish Habitat Consultation

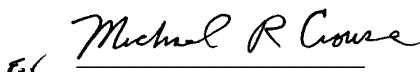
BIOLOGICAL OPINION

Installation of One Infiltration Gallery and Repair on Three Infiltration Galleries,
Trout Creek, Jefferson County, Oregon

Agency: Natural Resources Conservation Service

Consultation
Conducted By: NOAA Fisheries,
Northwest Region

Date Issued: October 21, 2002

Issued By: 
D. Robert Lohn
Regional Administrator

Refer to: 2002/01037 and 2002/01203

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1. ENDANGERED SPECIES ACT

1.1 Background

This biological opinion (Opinion) addresses two separate requests for consultation under section 7 of the Endangered Species Act (ESA). On August 30, 2002, National Marine Fisheries Service (NOAA Fisheries) received a biological assessment (BA) and request for initiation of ESA section 7 formal consultation from the Natural Resources Conservation Service (NRCS) for installation of one new infiltration gallery¹ on Trout Creek in Jefferson County, Oregon (NOAA Fisheries #2002/01037). In addition, on October 2, 2002, NOAA Fisheries received a BA and request for reinitiation of ESA section 7 formal consultation from the NRCS to repair three existing infiltration galleries on Trout Creek in Jefferson County, Oregon (NOAA Fisheries Reference #2002/01203). These three infiltration galleries were installed under a previous Opinion from NOAA Fisheries, dated November 6, 2001 (NOAA Fisheries Reference #2001/01079).

The one new infiltration gallery will be funded by the United States Department of Agriculture (USDA) Wildlife Habitat Incentive Program (WHIP). The three repairs will be funded by the Jefferson County Soil and Water Conservation District (Jefferson SWCD). NRCS, as lead action agency, will design and assist in implementing all of these projects. This Opinion is based on the information presented in the BAs and the result of the consultation process, which included a meeting, site visit, e-mails, and telephone conversations to obtain additional information.

The NRCS has determined that Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) may occur within the action areas. MCR steelhead was listed as threatened under the ESA on March 25, 1999 (64 FR 14517). Protective regulations were issued for MCR steelhead under Section 4(d) of the ESA on July 10, 2000 (65 FR 42422). The NRCS, using methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996), determined that the proposed actions are likely to adversely affect MCR steelhead.

The new infiltration gallery will be installed on the McDonald property above Degner Canyon on Trout Creek, a tributary to the Deschutes River in central Oregon. This infiltration gallery will replace one push-up dam.

With regard to the repairs, the previous Opinion considered a total of five infiltration galleries, four of which did not work at the designed capacity. Upon unsatisfactory operation of these four infiltration galleries, the landowners put in push-up dams to obtain the water necessary to irrigate their lands during the 2002 irrigation season. One of these four infiltration galleries has already been repaired, outside of consultation with NOAA Fisheries. This Opinion considers the three

¹E-mail correspondence from Greg Card, NRCS (October 4, 2002) clarifying that only one new infiltration gallery will be installed. The BA received on August 30, 2002, refers to installation of two galleries, but one of those galleries has since been cancelled.

infiltration galleries that have not yet been repaired. Two of these infiltration galleries are above Degner Canyon, on the Nartz property, and one is below Degner Canyon, on the Priday Ranch (referred to as “upper Priday Ranch” in the previous Opinion).

This Opinion reflects the results of the consultation process. The consultation process involved a meeting by NOAA Fisheries, Oregon Department of Fish and Wildlife (ODFW), NRCS, and SWCD staff on September 19, 2002, and multiple e-mails and telephone conversations.

The objective of this Opinion is to determine whether the actions to install one new infiltration gallery and repair three existing infiltration galleries are likely to jeopardize the continued existence of MCR steelhead.

1.2 Proposed Action

The proposed action includes the installation of one new infiltration gallery as well as the repair of three infiltration galleries that were installed in the fall of 2001.

Install One New Infiltration Gallery.

The one new infiltration gallery will replace one push-up dam. Infiltration galleries are perforated pipes placed below the bed of the creek and covered with gravel. Water flows into the pipes and is withdrawn using a pump on the creek bank, which distributes the water to crop land via a sprinkler system. Low flows and high temperatures will limit or preclude the presence of juvenile steelhead during construction proposed for late October, 2002.

The infiltration gallery will consist of 18-inch perforated pipe buried underneath the streambed, up to eight feet below the surface. The length of the pipes, including the section of pipe that runs from above the two-year flood elevation from the power source, will be approximately 100 feet per infiltration gallery. Trenches will be dug with an excavator, beginning at the power source beside the creek, and angling 90 degrees upstream below the stream bed. At each site a 36-inch diameter vertical sump will be placed near the power source. After placement of the pipe, the trenches will be filled with one foot of 2-inch washed drain rock. Geotextile fabric² will be placed on top of this rock. The trenches will then be filled with 3 to 4 inches clean drain rock up to a level of 1 foot below the creek bed elevation. Above this, the rest of the excavated area will be filled with a 1.5- to 2-inch minus clean drain rock. The natural stream elevation and contour will be re-established at each location. Any surface flow at the lower sites will be diverted with coffer dams, and the sites will be dewatered with trash pumps. After construction, any disturbed areas will be re-seeded with native plants to stabilize the soil and prevent streambank erosion.

²The geotextile fabric will be a woven vinyl and polyester textile that meets NOAA Fisheries screen criteria with regard to mesh size. This fabric is a different fabric than that used in the 2001 infiltration galleries on Trout Creek. This fabric change and the change in the backfilling design are intended to allow the infiltration galleries to work appropriately in light of the NRCS recognition that these project locations are not ideal for infiltration galleries. These sites are less than ideal because of the sediment load in the stream and the surrounding geology.

This design is intended to correct the design flaws that caused the 2001 infiltration galleries to not work properly (see below).

This new infiltration gallery will replace one gravel push-up dam. Push-up dams are temporary, instream impoundments, constructed out of stream substrate using a bulldozer, that create pools by blocking the flow of water. The resultant pools are a source of irrigation water, which is pumped out of the creek during the spring and summer for the purpose of crop irrigation. This method of withdrawing water creates fish passage barriers (from the gravel berms used to create the pools), localized areas of slow-moving water with elevated temperatures and higher levels of sediment accumulation (caused by blocking the flow of water in the stream), extreme pulses of turbidity and the potential for the entry of petroleum pollutants into the water (from the instream bulldozer activity), and disturbances to the substrate and to nutrient input processes (from the creation of an artificial pool).

Maintenance of the push-up dams takes place during the irrigation season, with bulldozer activity occurring from five to eight times, beginning in early spring and continuing throughout the summer. These negative effects are exacerbated late in the growing season when, as surface flow dries up, the pools are excavated even deeper to continue the withdrawal of water. At this time, low flows and warm temperatures stress any fish in the stream, and this activity causes higher levels of mortality than would be the case in the spring, when refugia are available for fish fleeing areas of localized disturbance.

Repair Three Existing Infiltration Galleries.

With regard to the repairs, the previous Opinion considered a total of five infiltration galleries, four of which did not work at the designed capacity. Upon unsatisfactory operation of these four infiltration galleries, the landowners put in push-up dams to obtain the water necessary to irrigate their lands during the 2002 irrigation season. One of these four has already been repaired outside of consultation. This Opinion considers the three infiltration galleries that have not yet been repaired. Implementation of these repairs will allow these infiltration galleries to replace the push-up dams, as expected from the previous Opinion.

These three infiltration galleries did not operate at the designed capacity because the type of filter fabric used was not appropriate for the geology in the project areas. According to the October 2, 2002 BA, the fabric was trapping fine sediment to an extent that did not allow the full amount of water to enter the infiltration galleries. Further, because of the sediment load in the stream and the surrounding geology, the NRCS has recognized that these project locations are less than ideal for infiltration galleries.

The NRCS has accounted for these conditions in the design for the proposed repairs. The proposed repairs will consist of excavating down to and removing the current fabric, installing a more porous fabric, and backfilling the structure with clean gravels. The excavation and backfilling of the three infiltration galleries will be similar to each other, and the overall design will mimic the design for the new infiltration galleries described above. The lengths of the excavated areas will vary from 100 feet to 240 feet. The trenches will be backfilled with 3 to 4-

inch clean drain rock up to a level of 1 foot below the creek bed elevation. Above this, the rest of the excavated area will be filled with a 1.5- to 2-inch minus clean drain rock. The natural stream channel elevation and contour will be re-established at each location. The existing perforated pipes and associated gravel envelopes will not be altered, nor will the associated sump and pump structure that has already been installed.

Any surface flow at the sites will be diverted with coffer dams, and the sites will be dewatered with trash pumps. After construction, any disturbed areas will be re-seeded with native plants to stabilize the soil and prevent streambank erosion.

According to the October 2, 2002, BA, no maintenance will be done to the gravel envelope, such as back flushing, without prior approval of the local ODFW biologist, and local SWCD and NRCS representatives.

The locations of the infiltration galleries, and the water rights associated with each site addressed in this Opinion, are shown in Table 1 (Haarberg, 2001).

Table 1³ Locations of Proposed Infiltration Galleries

<u>McDonald Site (new installation)</u> Irrigated Acres: 30 Water Right (GPM): 300 Location: river mile 31.1	<u>Priday Site:</u> Irrigated Acres: 60.2 Water Right (GPM): 681 Location: river mile 14.4
<u>Nartz Lower Site:</u> Irrigated Acres: 36.1 Water Right (GPM): 408 Location: river mile 27.6	<u>Nartz Upper Site:</u> Irrigated Acres: 62.3 Water Right (GPM): 705 Location: river mile 28.6

The landowner at each site will enter an agreement with NRCS that water diversion at the location of the infiltration gallery will end when the surface flows at the site of the original diversion dry up. All state laws and regulations that apply to water rights will be followed by the landowners and property managers at all five sites.

1.3 Biological Information

³E-mail correspondence from Greg Card, NRCS (October 4, 2002) clarifying the irrigated acres and gallons per minute rates for the McDonald Property Infiltration Gallery.

Biological information concerning the MCR steelhead is found in Busby *et al.* (1996). The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed.

Trout Creek and its tributaries contain sympatric populations of steelhead and resident redband trout (*Oncorhynchus mykiss gairdneri*). Data gathered on steelhead in the Deschutes River (which flows into the Columbia River about 87 river miles below the mouth of Trout Creek) provides some information on the likely composition of MCR steelhead in the project vicinity. Mark-recapture studies done over a 20-year period indicate an increasing number of hatchery strays migrating into and spawning in the Deschutes basin (Chilcote 1998), with a concomitant decline in the percentage of wild steelhead. At the same time, the density of resident redband trout has remained relatively stable. This suggests that the declines in wild steelhead may be attributed to low out-of-basin survival and “maladaptive genetic change” because of the high incidence of naturally-spawning stray hatchery steelhead (Chilcote, 1998).

In addition, the Oregon Division of State Lands (ODSL) in cooperation with ODFW, designates specific waterways in the mid Columbia River ESU as essential indigenous anadromous salmonid habitat under Oregon Administrative Rules (OAR), OAR 141-102-000 (see website information at: <http://statelands.dsl.state.or.us/esshabitat.htm>). The Trout Creek basin is shown on the ODSL map as designated as essential indigenous anadromous salmonid habitat; therefore, compliance with these policies and guidelines is also mandatory. Essential indigenous anadromous salmonid habitat, or essential habitat, means the habitat that is necessary to prevent the depletion of indigenous anadromous salmonid species during their life history stages of spawning and rearing. OAR 141-102-000 stipulates policies and standards for various activities that take place within these designated areas. Filling or removal in essential habitat is presumed by ODSL to be detrimental to indigenous anadromous salmonids. There are exemptions to this rule for certain activities that are customarily associated with agriculture. In general, fill or removal of more than 50 cubic yards will be authorized if it can be shown that only acceptable adverse impacts to indigenous anadromous salmonids or their essential habitat will occur, or the removal/fill will benefit populations of indigenous salmonids. In this instance, the repair of infiltration galleries that replaced will have long-term benefits to indigenous anadromous salmonids in Trout Creek.

1.4 Evaluating Proposed Action

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species. This analysis involves the initial steps of: (1) Defining the biological requirements and current status of the listed species; and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of

mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NOAA Fisheries finds that the action is likely to jeopardize, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NOAA Fisheries' essential fish habitat (EFH) analysis considers the effects of proposed actions on EFH and associated species and their life history stages, including cumulative effects and the magnitude of such effects.

1.4.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmon and steelhead is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list MCR steelhead for ESA protection, and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally-reproducing population levels at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment. For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing.

Steelhead in the Trout Creek basin are genetically allied with other steelhead trout (*Oncorhynchus mykiss*), which are typically summer-run stocks (Busby *et al.*, 1996). MCR steelhead are widely distributed throughout the Trout Creek basin, and are found throughout the length of the creek. A redd count survey done in 2000 by ODFW determined that 88% of steelhead spawning activity took place in the upper reaches of the creek, above Ashwood Bridge at river mile 29.1 (Nelson, 2000). During low flow years, like 2001, the spawning activity occurs downstream, as shown by an ODFW survey which found 62% of the steelhead spawned below the Ashwood Bridge in 2001 (Nelson, 2001).

Steelhead in the basin are late run stocks that enter the basin in early February with the peak immigration in late March. Spawning typically begins in April and continues through May. Juveniles typically rear in freshwater through the following year, emigrating from February through May after two years of freshwater residence. Adults return after one or two years in the ocean. Additional life history information for mid Columbia River ESU winter steelhead can be found in Busby *et al.* (1996).

Salmonid use in Trout Creek near the vicinity of the project is primarily for rearing and migration. Some spawning occurs throughout the 15-mile length of the project area, and rearing and feeding activity by juveniles likely occurs during their downstream migration. Portions of Trout Creek and its tributaries are designated as essential indigenous anadromous salmonid habitat by the ODSL (see discussion above, in section 1.3).

NOAA Fisheries concluded that the MCR steelhead are not presently in danger of extinction, but likely to become extinct in the foreseeable future (Busby *et al.*, 1996). This is primarily due to the declining abundance of natural runs. A significant problem for MCR steelhead in the Columbia River basin are the mainstream Columbia dams that inhibit migration, and the many water diversions and withdrawals for agricultural purposes that affect water quality. The degradation of freshwater habitat throughout the region is the primary reason that MCR steelhead and other salmonids in the region are at risk.

1.4.2 Environmental Baseline

The current range-wide status of the identified ESU may be found in Busby *et al.* (1995, 1996). The identified action will occur within the range of MCR steelhead. The action area is defined as the area that is directly and indirectly affected by the proposed action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, stream hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed, where actions described in this Opinion lead to additional activities, or affect ecological functions, contributing to stream degradation. As such, the action area for the proposed activities include the immediate portions of the watershed where the infiltration galleries will be placed, the sites of the push-up dams, and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is the streambed and riparian habitat of Trout Creek, 100 feet upstream from the upper McDonald site at river mile 31.1, and 200 feet downstream from the upper Priday site at river mile 14.4.

According to the BA, Trout Creek is a fourth-order stream, hydrologic unit code (HUC) 17070307, with a drainage area of 675 square miles. Originating in the Ochoco National Forest and the Blue Mountain Forests ecoregion, it is the largest east-side tributary of the Deschutes River, and flows into the Deschutes at river mile 87.2. The lower reaches of the Trout Creek watershed have been used for agriculture and rangeland since the late 19th century. Water rights were established in the early 1890s. The creek has been relocated and channelized in many areas to facilitate agricultural production. This has degraded instream habitat as well as the riparian area, leading to limited aquatic habitat complexity. However, despite the habitat limitations of Trout Creek, it is one of the most productive streams for summer steelhead in the entire Deschutes basin. Other fish in the system include resident rainbow trout (*O. mykiss*), northern pikeminnow (*Ptychocheilus oregonensis*), redbelly dace (*Richardsonius balteatus*), chiselmouth (*Acrocheilus alutaceus*), speckled dace (*Rhinichthys osculus*), long nose dace (*Rhinichthys cataractae*), sculpin (*Cottus sp.*), bridgelip sucker (*Catostomus columbianus*), largescale sucker (*Catostomus macrocheilus*), mountain whitefish (*Prosopius williamsoni*) and brown bullhead

(Ictalurus nebulosus).

Within the project area, Trout Creek is a shallow stream with a gradient of less than 1%, dominated by riffles and scour pools, and characterized by low sinuosity. The streambanks are very shallow, and stream substrate is composed of around 45% cobble and 25% gravel, with fines in riffles about 15%. The Nartz and McDonald⁴ sites have little riparian vegetation. On the Priday Ranch, the riparian zone is well developed with mature trees and abundant vegetation. Observed wetted-width during the August 2001 site visit varied from 0 to approximately 10 feet, with depths of up to 18 inches at the Priday sites. At the Nartz sites no water was flowing in late August 2001. Normal bankfull width was estimated at 15 to 20 feet.

This environmental baseline includes the short term effects caused by the installation of the infiltration galleries in the fall of 2001 on the Nartz and Priday sites. The short-term effects from this disturbance may have caused direct harm to MCR steelhead due to handling or otherwise disturbing rearing juveniles. Trenching within the creek may have altered fish rearing and migration behavior. Short-term increases in sediment and turbidity could have reduced light penetration and inhibit primary production, abraded and clogged fish gills, prevented feeding by sight feeders, stopped migration, and caused any fish in the area to avoid the disturbed reaches of the creek. The effects of these activities on MCR steelhead were minimized by limiting construction work to an ODFW-approved in-water work period.

Natural conditions such as low stream gradient, low summer flows, and high summer water temperatures make this area of Trout Creek prone to periods of poor water quality during the summer and act to limit or preclude salmonid fish use between July and October. It is possible, however, that juvenile steelhead trout may be present during the construction phases of the project. Water quality (temperature and flow volume) during the proposed construction timing would likely preclude use of this area by juveniles or adults. Water temperatures in Trout Creek during the summer, taken at locations monitored by the US Forest Service (USFS) and by the Bureau of Land Management (BLM) are often above 64 °F, the temperature standard for rearing juvenile trout (DEQ 1998), which suggests that the project area unsuitable for rearing of salmonids. Therefore, salmonid use near the project during construction activities would not be expected.

All in-water work will be conducted during the ODFW approved work window of July 1 through October 30. During this time, eggs are no longer in the gravel, and salmonid migration activity is

limited. If dry weather continues, an extension of the in-water work period may be sought. Any such extension will be coordinated with Tom Nelson, Trout Creek program manager for ODFW and NOAA Fisheries.

⁴Telephone conversation with Larry Brown, Fish Habitat Technician, ODFW (October 7, 2002) clarifying that there is currently little riparian vegetation on the McDonald Property.

Currently, the mainstem of Trout Creek from the mouth to its headwaters is listed under the Clean Water Act's Section 303(d), *List of Water Quality Limited Water Bodies*, for habitat modification, sediment/turbidity, and summer temperatures (ODEQ 1998). The project is within this water-quality limited stretch of Trout Creek. Water quality in the upper reaches of the Trout Creek watershed is considered good, although low flows and habitat degradation are still issues.

Based on the best available information on the current status of MCR steelhead range-wide, the population status, trends, and genetics, and the environmental baseline conditions within the action area (as described in the BA), NOAA Fisheries concludes that the biological requirements of the identified ESU within the action area are not currently being met. Steelhead populations are substantially below historic numbers. Recovery trends show no clear pattern due to lack of long-term data. Degraded freshwater habitat conditions, which include the effects of agriculture, have contributed to the decline.

The NOAA Fisheries Matrix of Pathways and Indicators (NMFS 1996) was used to assess the current condition of various steelhead and salmon habitat parameters. Use of the Matrix identified the following habitat indicators as either at risk or not properly functioning within the action area: Water temperatures, turbidity/sediment, chemical contaminants/nutrients, physical barriers, substrate, large woody debris, pool frequency and quality, off-channel habitat, refugia, streambank condition, width to depth ratio within the stream, floodplain connectivity, peak/base flows, drainage network increase, road density and location, riparian reserves, and disturbance history and regime. Actions that do not maintain or restore properly functioning aquatic habitat conditions have the potential to jeopardize the continued existence of MCR steelhead.

1.5 Analysis of Effects

1.5.1 Effects of the Proposed Actions

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document, *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The effects of proposed actions are expressed in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the project area.

1.5.1.1 Short-Term Effects of the Proposed Actions

The proposed action has the potential to cause the following short-term (of a duration of less than one year) impacts to threatened MCR steelhead:

1. In-water work may cause direct adverse impacts to any juvenile steelhead that may be present near the work site.

The construction activity has the potential to directly harm MCR steelhead due to handling or

otherwise disturbing rearing juveniles. Trenching within the creek may alter fish rearing and migration behavior. Short-term increases in sediment and turbidity could reduce light penetration and inhibit primary production, abrade and clog fish gills, prevent feeding by sight feeders, stop migration, and cause any fish in the area to avoid the disturbed reaches of the creek. The effects of these activities on MCR steelhead will be minimized by limiting construction work to an ODFW-approved in-water work period (July 1 to October 30). During this work period NOAA Fisheries does not expect adults, eggs or fry to be present, and NOAA Fisheries expects minimal use by juveniles in the action area.

2. Riparian function and stream channel morphology may be altered, causing indirect adverse impacts to steelhead.

Increased sedimentation may result in minor siltation of downstream spawning gravels. Channel conditions and dynamics may change following the placement of the infiltration galleries. The loss of riparian vegetation caused by construction may lead to elevated temperatures.

The effects of these activities on MCR steelhead and aquatic habitat factors will be limited by using construction methods and approaches included in project design and intended to avoid or minimize impacts. These include the actions described below, which are part of the proposed project design and implementation.

All in-water work will be conducted during the ODFW-approved in-water work period of July 1 to October 30, unless an extension is granted by ODFW and NOAA Fisheries. This will avoid impacts to rearing juvenile steelhead. Alteration and disturbance of stream banks and existing riparian vegetation will be minimized to the maximum extent possible. When working within the two-year floodplain, bank protection material will be placed to maintain normal waterway configuration, and riparian vegetation that is to be protected will be flagged. Native plants will be protected wherever possible, and any vegetation removed during construction will be replaced. NRCS/SWCD will minimize the amount of riprap used, and place only clean, non-erodible, upland angular rock of sufficient size to ensure effective functioning of the infiltration galleries. Natural substrate will be replaced on the streambed once the galleries are in place.

1.5.1.2 Long-Term Effects of the Proposed Actions

The abandonment of push-up dams that will result from the repair of existing infiltration galleries and installation of a new infiltration gallery is expected to provide long-term benefits to fish and other aquatic species. The beneficial effects, expected to last for the life of the project, include:

1. The removal of push-up dams will improve fish passage conditions and survival for anadromous salmonids.

The gravel berms that are in place throughout the irrigation season at seven locations in this stretch of Trout Creek inhibit the migration of salmonids. Downstream migration may be

completely blocked because the outlet of the pool may have flows that are too shallow to allow fish to escape. Rearing juvenile salmonids often become entrapped in the pools that are created. As flows decrease later in the season, these artificial pools become isolated reservoirs, and when the pools dry up in late August or September, the fish that are in them die (there is no evidence that juveniles are able to retreat into the interstices of the substrate when the surface flow has ended). Any artificial berms that remain in place after the fall and winter rains may also bar the upstream passage of migrating adults.

2. Because maintenance of the push-up dams will no longer be necessary, water quality throughout the length of the project will be improved, and direct mortality of steelhead may be avoided.

As flows in Trout Creek drop over the summer, the pools created by the push-up dams may become too shallow for efficient water withdrawal, and also become silted-in as the slow-flowing water deposits sediment in the pool. When this happens, the standard practice for continued irrigation is to get in the water with heavy equipment, clear out the bottom, push the substrate into a higher berm, and deepen the pool. This creates a heavy turbidity plume that is flushed downstream, may allow the entry of pollutants into the water, and may kill any juvenile steelhead that are present in the pool. Moreover, because the construction of push-up dams is not constrained by ODFW's preferred in-water work windows, the creation of push-up dams done early in the season can destroy any eggs that are in the gravel.

Infiltration galleries, while generally preferable to push-up dams, may also have long-term negative impacts depending on the degree to which pumping from the infiltration gallery dewateres the stream at an accelerated rate, and the extent to which any cleaning or back-flushing operations are conducted which could negatively impact water quality and salmon spawning substrate. For the Trout Creek project, the proposed pumping rate is not expected to accelerate dewatering of the stream channel, and the design of the infiltration galleries is such that no back-flushing or cleaning is expected in the short term (5 years).

1.5.1.3 Overall Effects of the Proposed Actions

For the proposed action, the NOAA Fisheries expects that the effects of the proposed project will tend to maintain most of the habitat elements over the long term, greater than two years, and will improve several of the at-risk or non-functioning habitat elements (particularly chemical contaminants, temperature, sediment/turbidity, pool quality, and physical barriers) within the project area. In the short term, a temporary increase in sediment entrainment and turbidity, and disturbance of riparian and instream habitat, is expected. Fish may be killed or temporarily displaced during the in-water work. However, because of the long-term benefit to fish passage and water quality, the net effect from the proposed action, including proposed plantings, is expected to be the maintenance and restoration of functional steelhead habitat conditions.

1.5.2 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area is defined as the streambed and riparian habitat of Trout Creek throughout the project area. The action area extends 100 feet upstream of the upper McDonald site, and 200 feet downstream of the lower Priday site. The project actions consist of replacing push-up dams with infiltration galleries, and are detailed in the project description section above. NOAA Fisheries is not aware of any significant change in non-federal activities that are reasonably certain to occur within the action area. NOAA Fisheries assumes that future private and State actions will continue at similar intensities as in recent years. Other NRCS/SWCD water withdrawal projects, including infiltration galleries, may be built in the Trout Creek watershed. Each of these projects would be reviewed through separate ESA section 7 consultations and are not considered cumulative effects of this project.

1.6 Conclusion

NOAA Fisheries has determined based on the available information, that the proposed action is not likely to jeopardize the continued existence of MCR steelhead. NOAA Fisheries used the best available scientific and commercial data to apply its jeopardy analysis, when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NOAA Fisheries applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment impacts, in-water construction, and habitat loss. These effects will be mitigated over the long term through the implementation of proposed replacement riparian plantings and improved fish passage at the locations of the infiltration galleries. Direct mortality of rearing juvenile steelhead (if any are present) may occur during the in water work period of project activities.

1.7 Reinitiation of Consultation

Consultation must be reinitiated if: (1) The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; (2) new information reveals effects of the action may affect listed species in a way not previously considered; (3) the action is modified in a way that causes an effect on listed species that was not previously considered; or (4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To reinitiate consultation, NRCS must contact the Habitat Conservation Division (Oregon Branch Office) of NOAA Fisheries.

2. INCIDENTAL TAKE STATEMENT

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. "Harass" is defined as actions that create the likelihood of injuring listed species to by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. "Incidental take" is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of MCR steelhead because of detrimental effects from increased sediment levels and the minor loss of habitat (non-lethal), and the potential for direct incidental take during in-water work (lethal and non-lethal). Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on steelhead habitat or population levels. Therefore, even though NOAA Fisheries expects some low level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species. In instances such as these, NOAA Fisheries designates the expected level of take as "unquantifiable." Based on the information in the biological assessment, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. The extent of the take is limited to within the area of project disturbance, extending 100 feet upstream and 200 feet downstream of the project area.

2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. To minimize the amount and extent of incidental take from the installation of one new infiltration gallery and repair of three existing infiltration galleries on Trout Creek, the project design and implementation will be done in such a manner to minimize the impacts to MCR steelhead.
2. To ensure effective implementation of the reasonable and prudent measures, fish

handling, erosion control measures, plantings for site restoration, and other elements of the project shall be monitored and evaluated both during and following construction.

2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, NRCS/SWCD must comply with the following terms and conditions, which will implement the reasonable and prudent measures described above. These terms and conditions should be incorporated into construction contracts and subcontracts to ensure that the work is carried out in the manner prescribed. Implementation of the terms and conditions within this Opinion will further reduce the risk of impacts to fish and Trout Creek habitat. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1 (project design and construction) above, the NRCS shall ensure that:
 - a. Project design. The project is designed to ensure that impacts to natural resources have been avoided, minimized and mitigated, and that the project design includes installation of a totalizing flow meter device.
 - i. The design and repair of the infiltration galleries enables the irrigators to comply with all Oregon Administrative Rules and Oregon Revised Statutes promulgated by the Oregon Water Resources Department (OWRD) as they relate to rate and duty of water use. "Rate and duty of water" means quantity of water expressed in cfs (rate) and the total volume of water expressed in acre feet (duty) as allowed in the water use permit. The responsibility for ensuring compliance with water rights laws rests with the OWRD.
 - b. Project construction. The following implementation conditions are met:
 - i. Minimum area. Construction impacts will be confined to the minimum area necessary to complete the project.
 - ii. In-water work. All work within the active channel of all anadromous fish-bearing streams, or in systems which could potentially contribute sediment or toxicants to downstream fish-bearing systems, will be completed within the ODFW-approved in-water work period of July 1 to October 31, unless an extension is approved, in writing, by NOAA Fisheries.
 - (1) Isolation of in-water work area. During in-water work, if listed fish may be present, including incubating eggs or juveniles, and the project involves either significant channel disturbance or use of equipment instream, ensure that the work area is well isolated from the active flowing stream within a cofferdam (made out of sandbags, sheet pilings, inflatable bags, *etc.*), or similar structure, to minimize the potential for sediment entrainment. Furthermore, no ground or substrate disturbing action will occur within the active channel 300 feet upstream of potential spawning habitat as measured at the thalweg without isolation of the work area from flowing waters.

- (a) Capture and release of entrapped fish. Prior to and intermittently during pumping attempts will be made to capture and release fish from the work isolation area as is feasible. This work will be done by the Trout Creek project manager or staff who have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.
 - (i) ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during seining and transfer procedures. The transfer of ESA-listed fish must be conducted using a sanctuary net that holds water during transfer, whenever necessary to prevent the added stress of an out-of-water transfer.
 - (ii) Captured fish must be released as near as possible to capture sites.
 - (iii) The transfer of any ESA-listed fish from the applicant to third parties other than NOAA Fisheries personnel requires written approval from NOAA Fisheries.
 - (iv) The applicant must obtain any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities.
 - (v) The applicant must allow the NOAA Fisheries or its designated representative to accompany field personnel during the seining activity, and allow such representative to inspect the applicant's records and facilities.
 - (vi) A description of any capture and release effort will be included in a post-project report, including the name and address of the supervisory fish biologist, methods used to isolate the work area and minimize disturbances to ESA-listed species, stream conditions prior to and following placement and removal of barriers; the means of fish removal; the number of fish removed by species; the condition of all fish released, and any incidence of observed injury or mortality.
- (b) Water pumped from the work isolation area will be discharged into an upland area providing over-ground flow prior to returning to the creek. Discharge will occur in such a manner as not to cause erosion.
- (c) Discharges into potential fish spawning areas or areas with submerged vegetation are prohibited.

- (2) Fish passage. Work will not inhibit passage of any adult or juvenile salmonid species throughout the construction period or after project completion.
- (3) Pollution and erosion control specifications. Pollution and erosion control measures, consistent with the NRCS Best Management Practices (BMPs), will be developed for each construction site to prevent point-source pollution related to construction operations. These measures will contain the elements listed below and meet requirements of all applicable laws and regulations:
 - (a) Methods that will be used to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.
 - (b) Methods that will be used to confine and remove and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.
 - (c) A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.
 - (d) A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.
 - (e) Measures that will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
- (4) Boundaries of the clearing limits associated with site access and construction will be flagged to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
- (5) All temporary erosion controls (*e.g.*, straw bales, silt fences) will be in-place and appropriately installed downslope of project activities within the riparian area. Effective erosion control measures will be in-place at all times during the contract, and will remain and be maintained until such time that permanent erosion control measures are effective.
- (6) When heavy equipment is required, the applicant will use equipment having the least impact (*e.g.*, minimally sized, with rubber tires if feasible).

- (7) Heavy equipment will be fueled, maintained and stored as follows.
 - (a) All equipment that is used for instream work will be cleaned prior to operations below the bankfull elevation. External oil and grease will be removed, along with dirt and mud. No untreated wash and rinse water will be discharged into streams and rivers without adequate treatment.
 - (b) Place vehicle staging, maintenance, refueling, and fuel storage areas a minimum of 150 feet horizontal distance from any stream.
 - (c) All vehicles operated within 150 feet of any stream or water body will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.
 - (d) When not in use, vehicles will be stored in the vehicle staging area.
- (8) Any instream large wood or riparian vegetation that is moved or altered during construction will stay on site or be replaced with a functional equivalent.
- (9) Tree removal will be strictly limited. Tree removal will be mitigated for onsite by a 2:1 replanting ratio.
- (10) Whenever the project area is to be revegetated or restored, native channel material, topsoil and native vegetation removed for the project should be stockpiled for redistribution on the project area.
- (11) All exposed or disturbed areas will be stabilized to prevent erosion.
 - (a) Areas of bare soil within 150 feet of waterways, wetlands or other sensitive areas will be stabilized by seeding, mulching, and placement of erosion control blankets and mats, if applicable, quickly as reasonable after exposure, but within 7 days of exposure.
 - (b) All other areas will be stabilized quickly as reasonable, but within 14 days of exposure.
 - (c) Seeding outside of the growing season will not be considered adequate nor permanent stabilization.
- (12) All erosion control devices will be inspected during construction to ensure that they are working adequately.
- (13) Erosion control devices will be inspected daily during the rainy season, weekly during the dry season, monthly on inactive sites.
- (14) If inspection shows that the erosion controls are ineffective, work crews will be mobilized immediately, during working and off-hours, to make repairs, install replacements, or install additional controls as necessary.

- (15) If soil erosion and sediment resulting from construction activities is not effectively controlled, the engineer will limit the amount of disturbed area to that which can be adequately controlled.
- (16) Sediment will be removed from sediment controls once it has reached 1/3 of the exposed height of the control. Whenever straw bales are used, they will be staked and dug into the ground 5 inches (12 cm). Catch basins will be maintained so that no more than 6 inches (15 cm) of sediment depth accumulates within traps or sumps.
- (17) Sediment-laden water created by construction activity will be filtered before it enters a stream or other water body.
- (18) All damaged areas will be restored to pre-work conditions including restoration of original streambank lines, and contours.
- (19) All exposed soil surfaces, including construction access roads and associated staging areas, will be stabilized at finished grade with mulch, native herbaceous seeding, and native woody vegetation.
- (20) Disturbed areas will be planted with vegetation adapted to the project vicinity or the region of the state where the project is located, and will comprise a diverse assemblage of woody and herbaceous species.
- (21) Plantings will be arranged randomly within the revegetation area.
- (22) All plantings will be completed prior to April 15.
- (23) No herbicide application will occur as part of this permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.
- (24) Plantings will achieve an 80% survival success after three years.
 - (a) If success standard has not been achieved after 3 years, the applicant will submit an alternative plan to the NRCS. The alternative plan will address temporal loss of function.
 - (b) Plant establishment monitoring will continue and plans will be submitted to the NRCS until site restoration is successful.

- 2. To implement Reasonable and Prudent Measure #2 (monitoring and evaluation) above, the NRCS shall ensure that:
 - a. Landowners, with prior notification from the Jefferson County SWCD, will allow reasonable access to NOAA Fisheries and NRCS personnel for long-term monitoring of the effectiveness of these reasonable and prudent measures, terms and conditions, for avoiding and minimizing take. This access is not intended for enforcement purposes. If potential violations are discovered, the appropriate agency will work cooperatively with the landowner to achieve compliance.
 - b. By December 1 of each calendar year, until 2012, NRCS will provide a report to NOAA Fisheries with the following categories of information:
 - i. Hydraulic Conductivity. For each infiltration gallery, hydraulic

- conductivity will be assessed utilizing standard NRCS methods. These assessments shall occur, at minimum, at the conclusion of construction (one time only), and at the beginning and the end of each irrigation season (annually).
- ii. Stream Flow. For each infiltration gallery, stream flow will be assessed. At minimum, information shall include the date at which: (1) Stream flow disappears, and (2) pumping stops.
- c. Within one year of completion of the project, NRCS will provide a report to NOAA Fisheries with the following categories of information:
- i. Project identification.
 - (1) Applicant's name;
 - (2) project name;
 - (3) project location by 5th field hydrological unit code (HUC);
 - (4) starting and ending dates for work performed under the permit; and
 - (5) the NRCS contact person.
 - ii. Description of in-water work isolation methods and results. All projects involving isolation of in-water work areas must include a report of any seine and release activity including:
 - (1) The name and address of the supervisory fish biologist;
 - (2) methods used to isolate the work area and minimize disturbances to ESA-listed species;
 - (3) stream conditions prior to and following placement and removal of barriers;
 - (4) the means of fish removal;
 - (5) the number of fish removed by species;
 - (6) the location and condition of all fish released; and
 - (7) any incidence of observed injury or mortality.
 - iii. Pollution and erosion control. A summary of all pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.
 - iv. A narrative assessment of the project's effects on natural stream function.
 - v. A summary of the operations and maintenance procedures. This shall include:
 - (1) No operations and maintenance will occur that may adversely affect MCR steelhead without prior approval from NOAA Fisheries.
 - (2) The landowner, per the operations and maintenance agreement with NRCS, will maintain all equipment so that it functions as designed, and will keep a seasonal record of the amount of water used.
 - (3) All backflushing activities or schedules must be approved by local representatives for ODFW, NRCS and SWCD before implementation.

- vi. Photographic documentation of environmental conditions at the project site and compensatory mitigation site(s) (if any) before, during and after project completion.
 - (1) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.
 - (2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
 - (3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.
- vi. The monitoring and evaluation report will be submitted to:
Branch Chief - Portland
National Marine Fisheries Service
Attn: 2002/01037 and 2002/01203
525 NE Oregon Street
Portland, OR 97232

2.4 Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species or to develop additional information. NOAA Fisheries believes the following conservation recommendations are consistent with these obligations, and therefore should be carried out by the NRCS.

NOAA Fisheries considers an infiltration gallery to be experimental screen technology for excluding fish from water diversion systems. As discussed earlier in this Opinion, infiltration galleries can in some instances have detrimental impacts on stream flow, water quality, and ground water resources. NOAA Fisheries, in coordination with NRCS, will consider information collected in conjunction with the construction and operation of the Trout Creek infiltration galleries in developing further design criteria for the use of infiltration galleries as fish screen devices in future applications.

Conservation Recommendation: To improve our understanding of fish utilization of Trout Creek, NOAA Fisheries recommends that NRCS work with ODFW to monitor fish spawning, incubation, emerging and rearing behavior in the sections where infiltration galleries operate.

3. MAGNUSON-STEVENSON ACT

3.1 Background

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle (50 CFR 600.110).

Section 305(b) of the MSA [6 USC 1855(b)] requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH.
- NOAA Fisheries shall provide conservation recommendations for any Federal or state Activity that may adversely affect EFH.
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reason for not following the recommendations.
- The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on

EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: Chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information. Currently, the only chinook salmon present in Trout Creek are of hatchery origin.

3.4 Proposed Action

The proposed action is detailed above in section 1.2 of the ESA portion of this Opinion. The action area includes the Trout Creek Infiltration Galleries (one installation and three repairs) projects located along Trout Creek between river miles 14.4 and 31.1, and adjacent stream and riparian areas. This area has been designated as EFH for various life stages of chinook salmon.

3.5 Effects of Proposed Action

As described in detail in the ESA portion of this consultation, the proposed activities may result in detrimental, short-term, adverse effects to a variety of habitat parameters.

3.6 Conclusion

NOAA Fisheries believes that the proposed action will adversely affect the EFH for chinook salmon.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. In addition to conservation measures proposed for the project by the NRCS, all of the reasonable and prudent measures and the terms and conditions contained in section 2.4 of the ESA portion of this Opinion are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the NRCS to provide a written response to NOAA Fisheries' EFH conservation recommendations within 30 days of its receipt of this letter. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. If the response is inconsistent with NOAA Fisheries' conservation recommendations, the reasons for not implementing the NRCS shall explain its reasons for not following the recommendations.

3.9 Supplemental Consultation

The NRCS must reinitiate EFH consultation with NOAA Fisheries if either action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

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